PHENIX

TECHNICAL SUPPORT ZOIZ

PHENIX WEEKLY PLANNING

3/15/2012

Don Lynch

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This Week

- Change over from 200 GeV to 500 GeV run
- Maintenance Access days: Mon 3/12 & Wed 3/14
  - MPC North rack Installed
  - RPC1 auxiliary cooling insta;lled
  - FVTX/VTX troubleshooting and repair
  - DC repairs
  - MuTr troubleshooting
- Planning and preparation for 2012 shutdown
- sPHENIX design and analyses

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Next Week

- 500 GeV runs
- No scheduled maintenance access (next access 3/28?)
- Prep for shutdown 2012
- sPHENIX design and analyses
- Other Business

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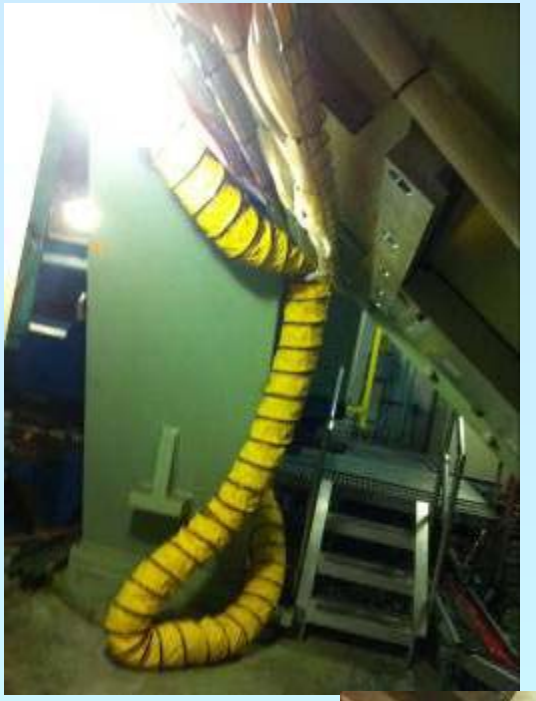
RPC1 Cooling

South



North

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MPC Electronics Rack Upgrade, North Side

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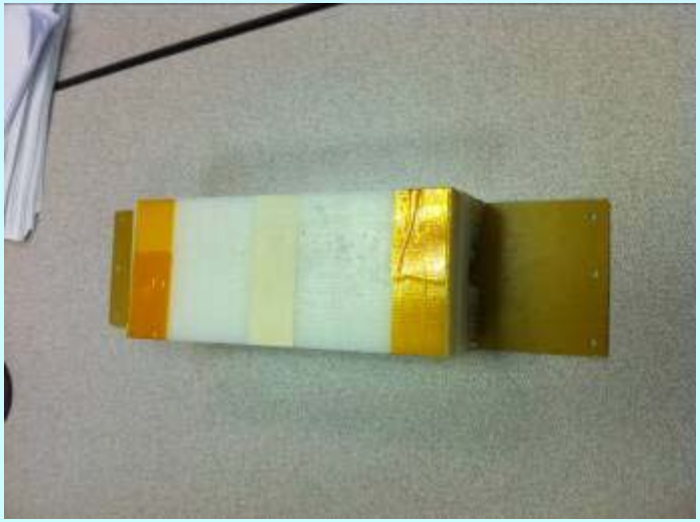


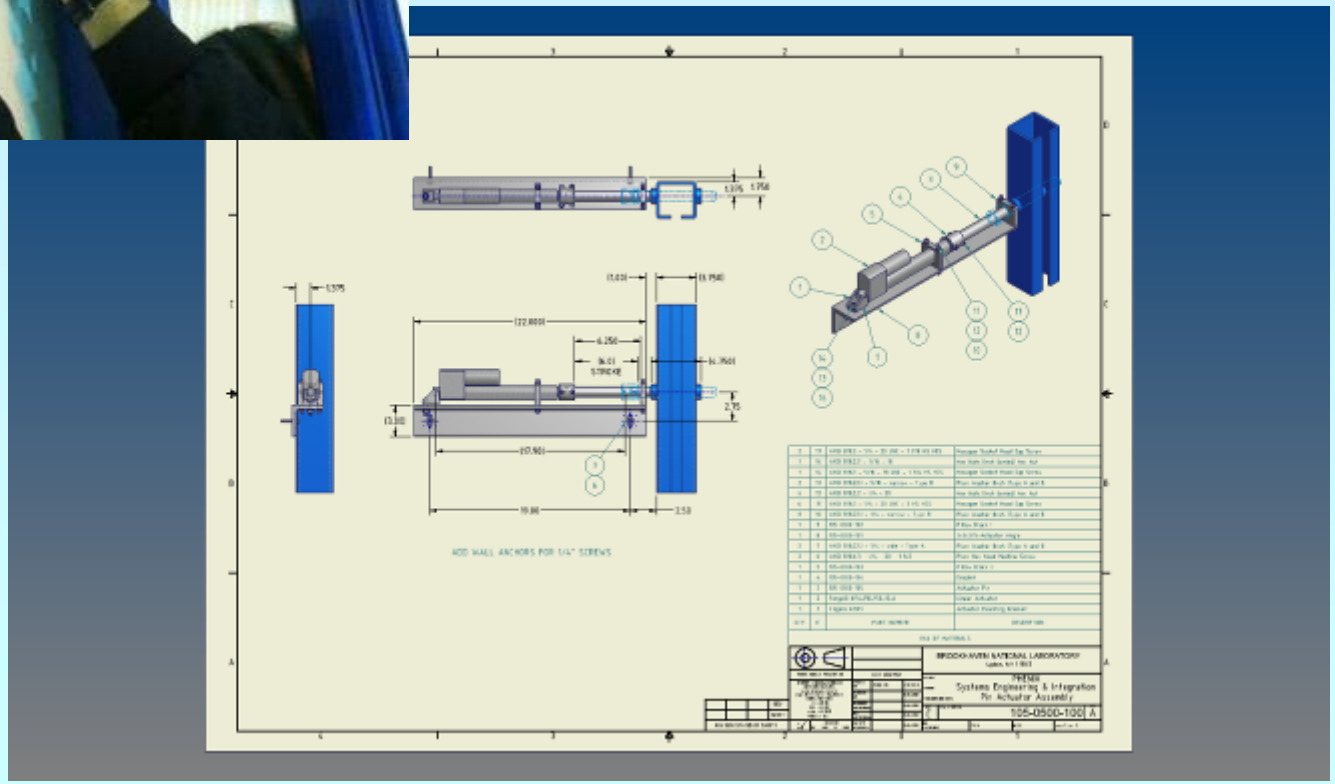
VTX/FVTX
Troubleshooting, Repair and Modifications

Summary of changes made to FVTX cooling system during the March 14 access.

- All FVTX loops are now on the low temp chiller which is currently set to -3C at the chiller.
- FVTX Big Wheels—All FVTX Big Wheels were moved to the -3C Cooling loop. Flow rate is about 27-28 GPH. This was the same flow as before the change.
- FVTX Disks on South side- Lines were split so that two half disks in parallel are feed by one flowmeter instead of 4 half disks in parallel being feed by one flowmeter. Original flow to four half disks was 28 GPH (in parallel to 4 half disks) before the change. After the change we are flowing 20 GPH to two half disks in parallel. (about 50% increase in flow per disk).
- FVTX Disks on North side- No changes made. Flow is 28 GPH to 4 half disks in parallel.
- Just a note, the Dew point in the IR is around 3C today. This number usually varies between -5C in the winter to as high as 10C in the late spring. Any surfaces exposed to the IR below the dew point temp will start to sweat.

Window Washer Safety Pins:

Remote insertion/retraction



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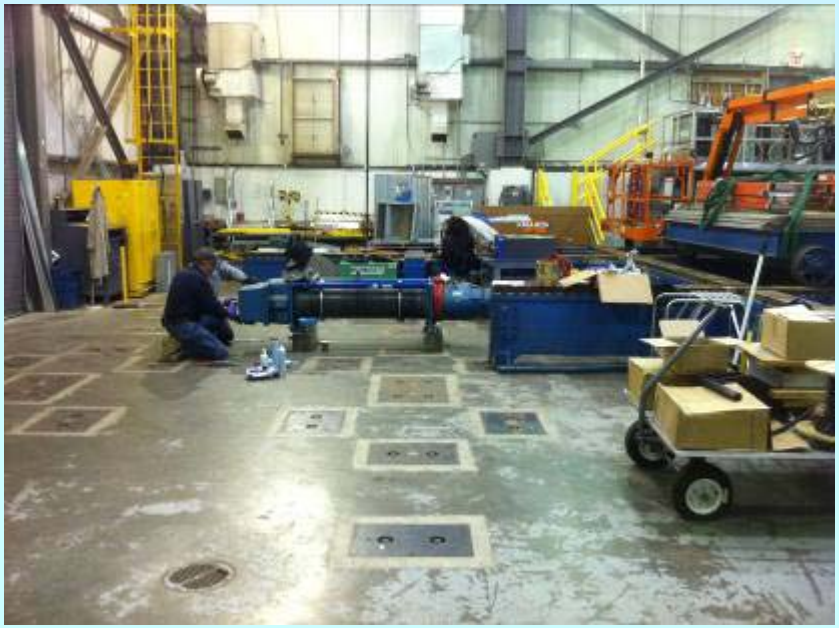
AH Crane variable speed drive
and wireless remote upgrade ??



Looking Ahead to the 2012 Shutdown
(Continued)

Rough Schedule:

Prep for shutdown	2/1-6/15/2011
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and proceures	
Assembly and QA tests	
Run 12 Ends	6/15/2012
Shutdown Standard Tasks	6/15-7/13/2012
• Open wall, disassemble wall, Remove MuID Collars,	
• Move EC to AH, etc.	
Disassemble VTX/FVTX services	7/2-7/20/2012
Remove VTX/FVTX and transport to Chemistry Lab	7/20/2012
Remove MMS & MMN vertical East lampshades	7/23-7/27/2012
MuTr South Station 1 work	
Install access (Sta. 1work platforms)	7/23-7/27/2012
Disconnect Cables, hoses etc, ID/label all	7/30-8/3/2012
Remove FEE plates and chambers	8/6-8/10/2012
Station 2 Terminators and manifold upgrade through access opened by station 1 removal	8/13/-8/31/2012

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Looking Ahead to the 2012 Shutdown
(Continued)

MuTr South Station 1 work (Cont'd)	
Clean/install new MuTr Sta. 1 chamber parts and upgrades (concurrent At RPC Factory)	8/13/-8/31/2012
Re-install chambers and FEE plates	9/4-9/7/2012
Re-cable, re-hose and test	9/10-9/28/2012
Repair upgrade, test, reinstall VTX/FVTX	7/23-9/17/2012
Station 3 North and South (upper half) re-capacitation and air manifold upgrades	7/23-9/30/2012
Summer Sunday (RHIC)	8/5/12
Substation breaker upgrade/test (CAD)	TBD
AH utility power distribution upgrade	TBD
RPC stations 1 and 3, north and south maintenance	As required
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
pre-run commissioning and prep for run 13	10/1-11/30/2012
Prep for EC roll in	11/5-11/9/2012
Roll in EC	11/12/2012
Prep IR for run	11/12-10/17/2010
Pink/Blue/White sheets	10/17-11/30/201
Start run 13	12/3/2012

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New Electrical Work for 2012 Shutdown, not yet scheduled

1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.
2. Add the Assembly Hall Crane lockout/contactor/ indicator light key switch circuit – similar to IR Crane.
3. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
4. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
5. Work with Martin Purske on new computer rack replacements/additions for upcoming Run 13. He always has last minute Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work.

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Additional Work for 2012 Shutdown, not yet scheduled

1. Replaced aging magnet hoses
2. identify obsolete services passing through sill and remove them.
3. Revisit cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add light & 2 switch controlled outlets below chiller platform in AH
6. Add limit switch and improved spooling control for window washer cable.
7. Add dusk to dawn light by gas mixing house and R134A shed

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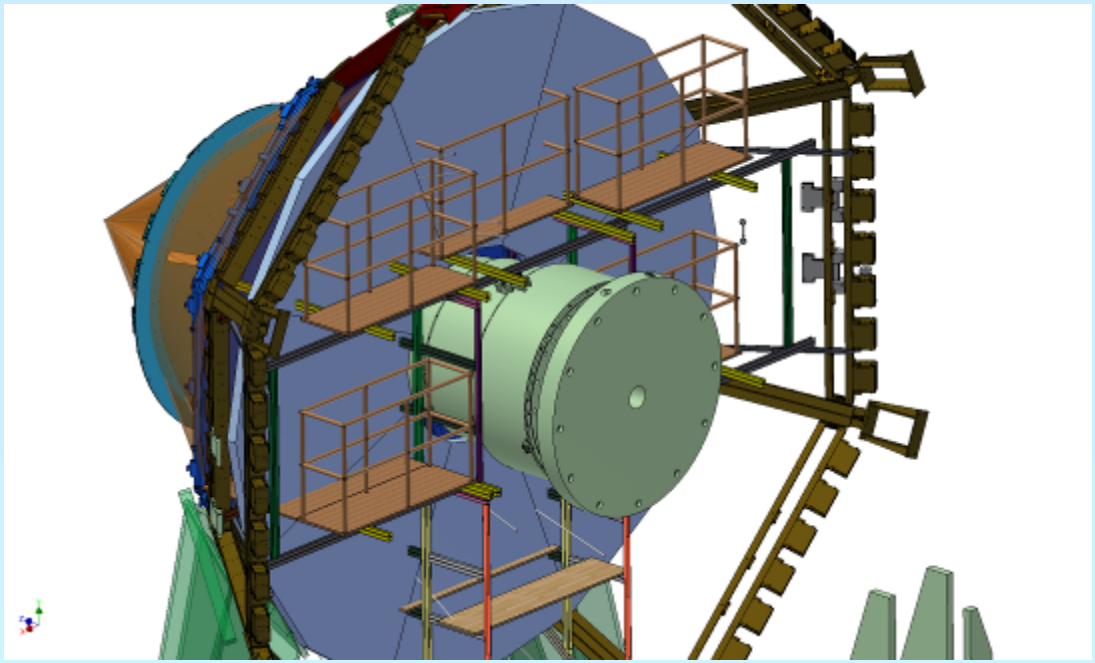
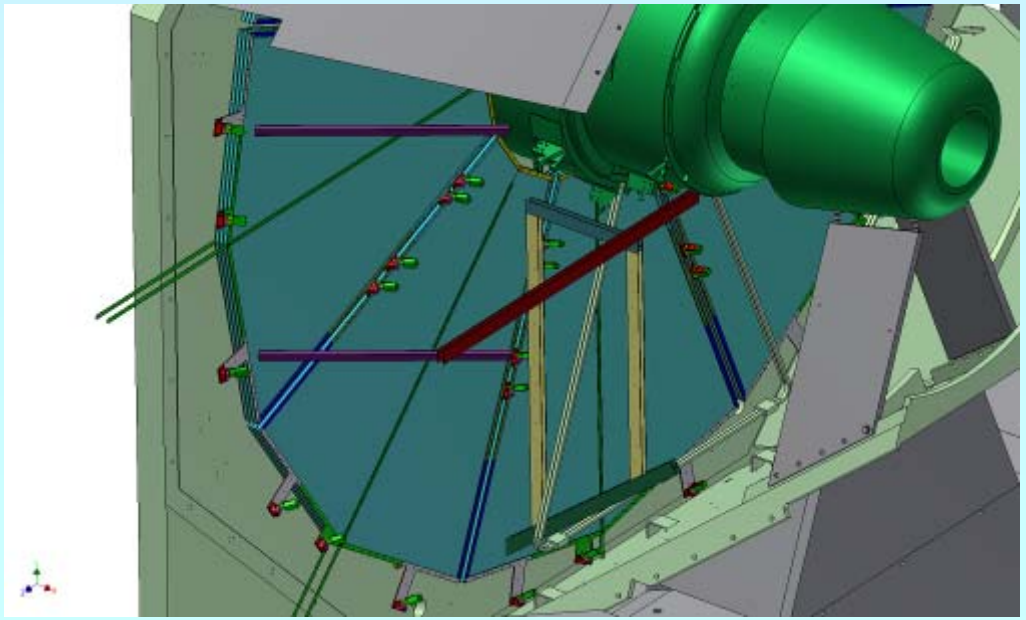


North & South internal work platforms for next summer's shutdown



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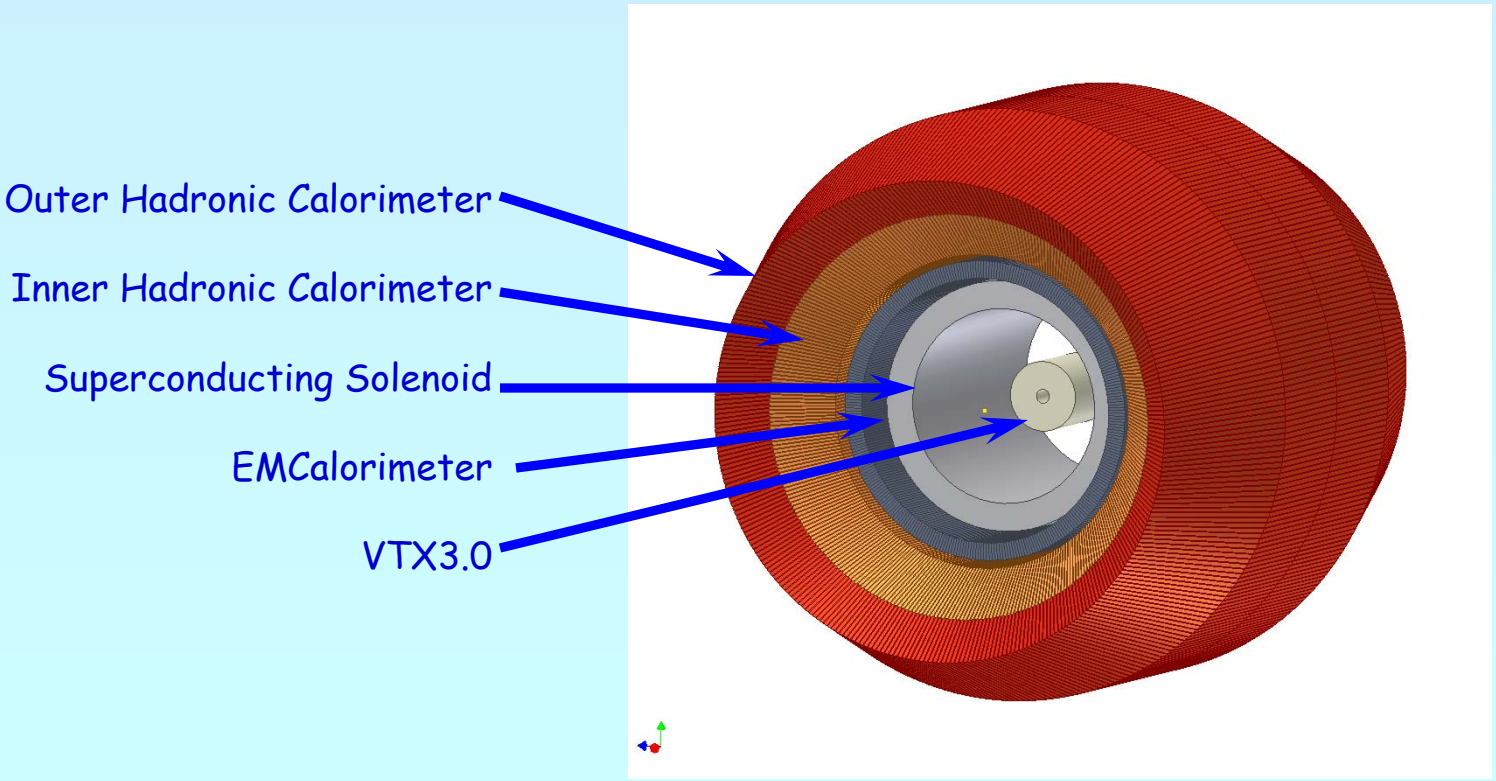
sPHENIX Upgrades

PHENIX engineering and design are providing support for overall structural and spacial design and modeling, cost estimation and prototype design/fabrication



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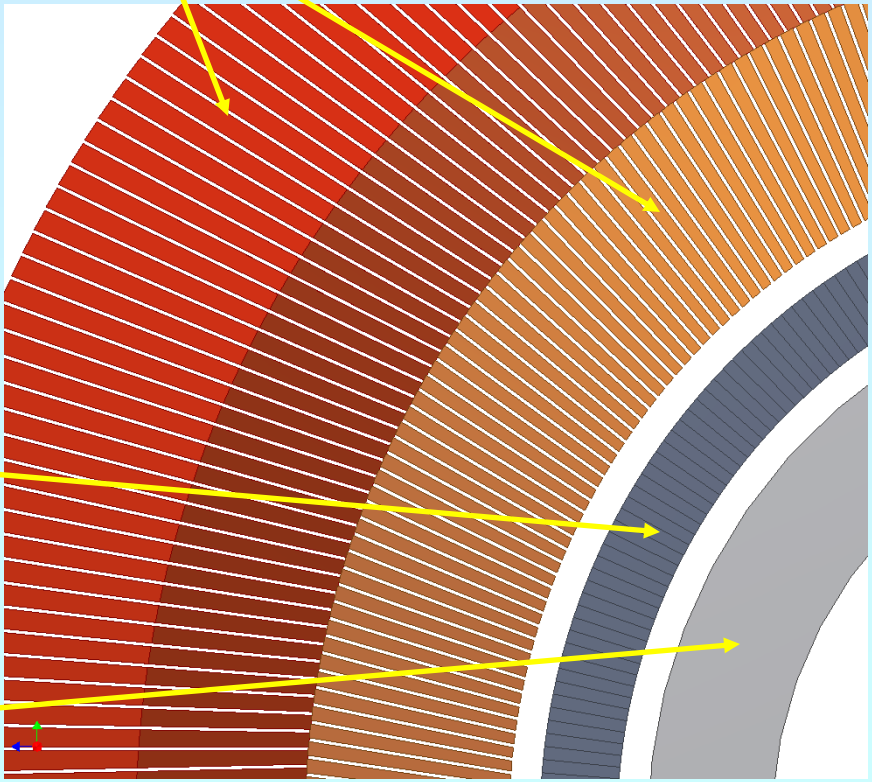
Inner and outer Hadronic Calorimeters
320 segments each, steel and scintillator
1 meter total thickness, ~4.5 meters long

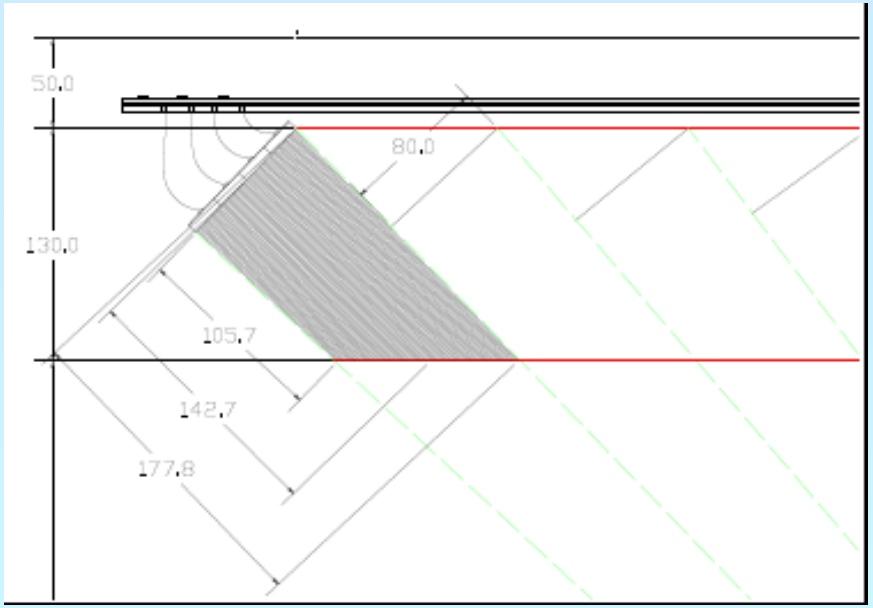
VTX 3.0 vertex detector
(upgraded from present VTX)
[not in picture]

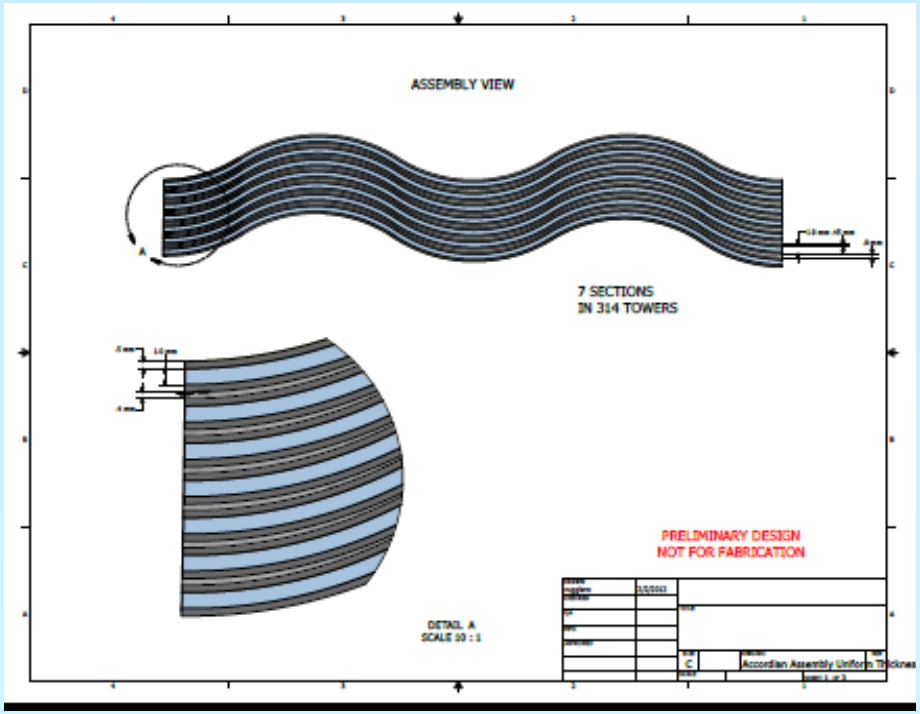
ElectroMagnetic Calorimeter
314 segments, Tungsten
and scintillator 0.125 m th
~2 m long

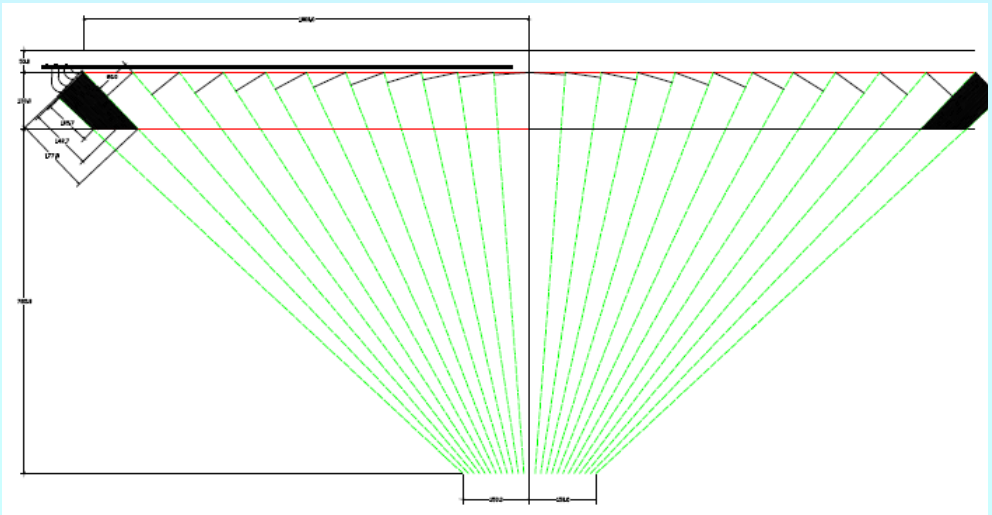
Superconducting solenoid
2 Tesla Magnet and cryostat
.70 m inner radius, .20 m th



TECHNICAL SUPPORT 2012







Electromagnetic calorimeter segments using "accordian" shaped scintillators and tungsten plates to optimize detector sampling

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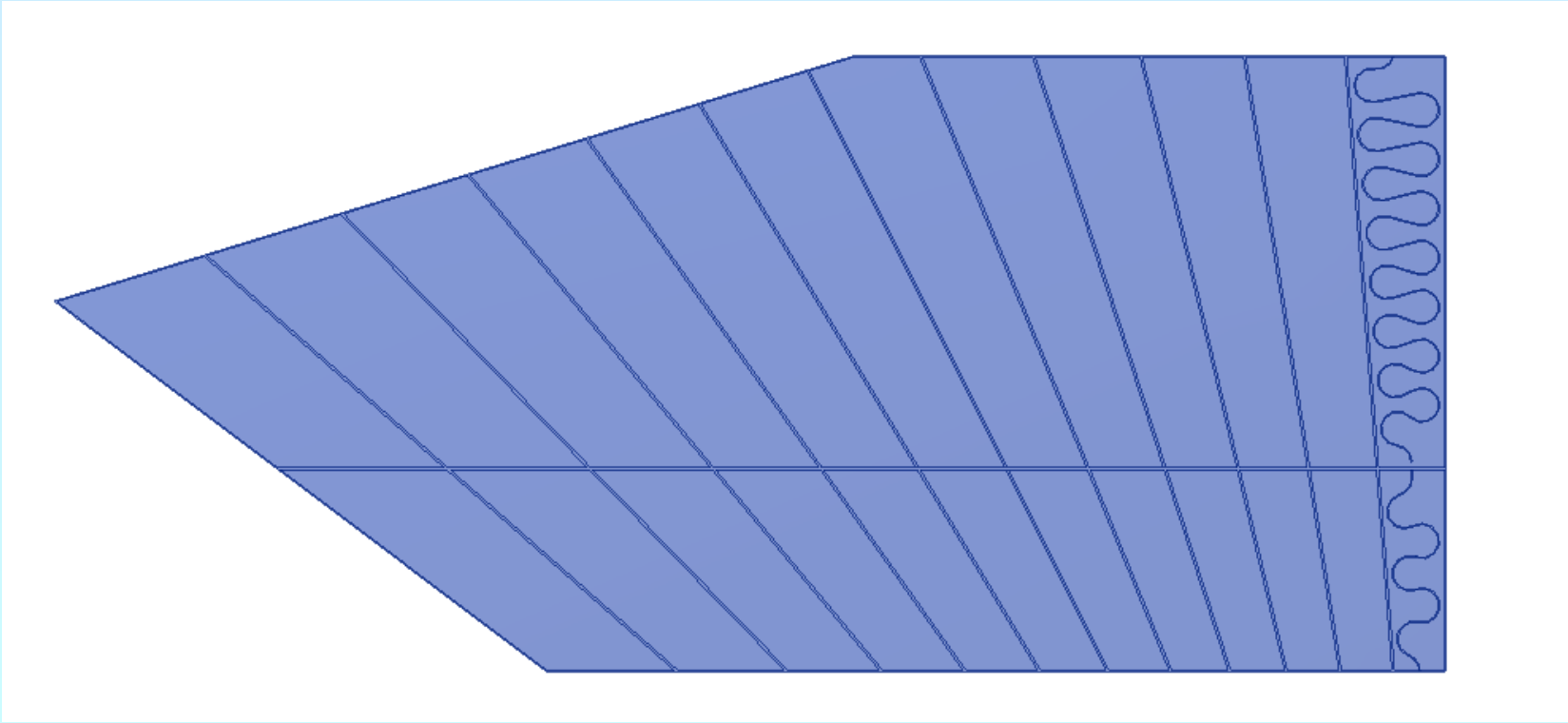
Inner and outer HCal scintillator Segments from mid plane out
12 inner and 12 outer with imbedded serpentine optic fiber



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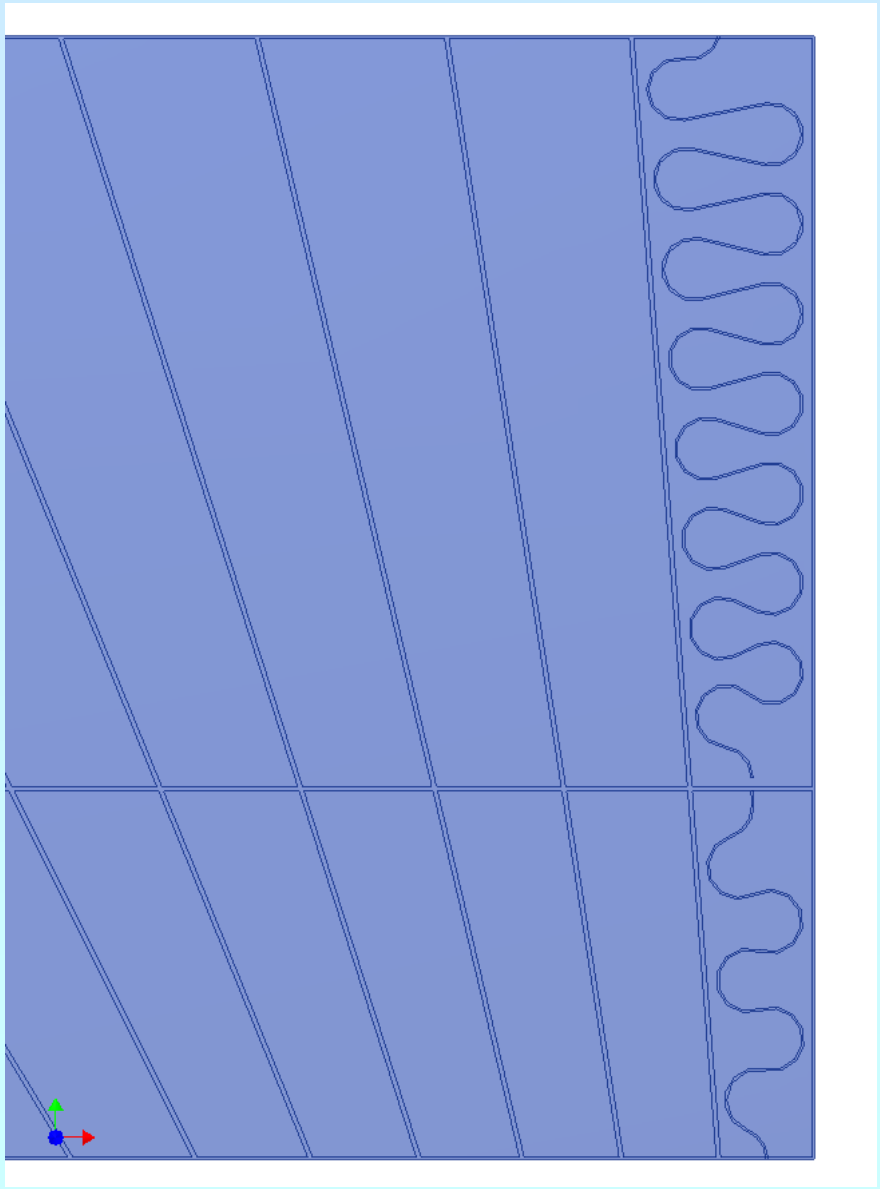

Typical Optic Fiber serpentine pattern on 1 scintillator section Opposing pattern on opposite side

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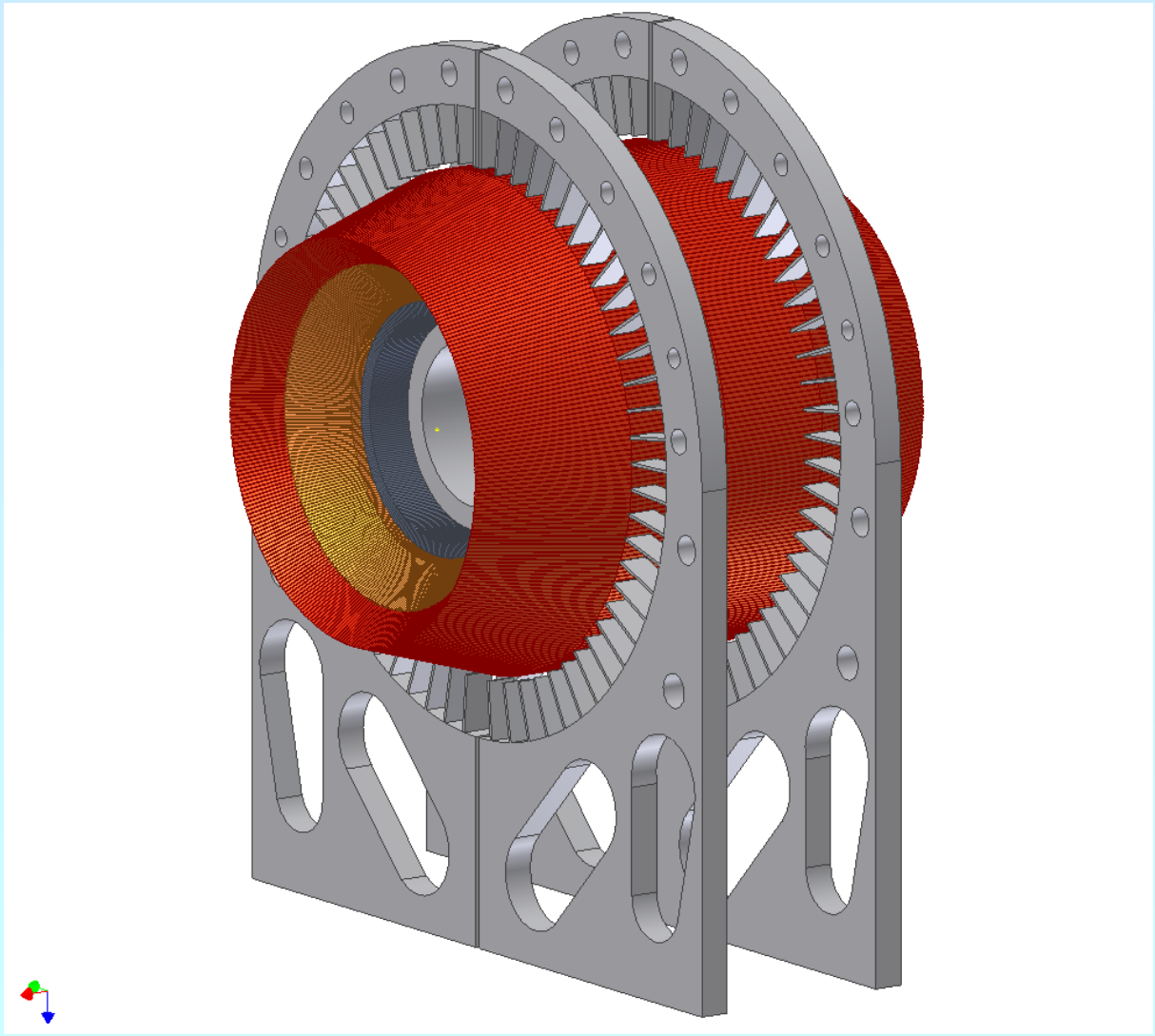

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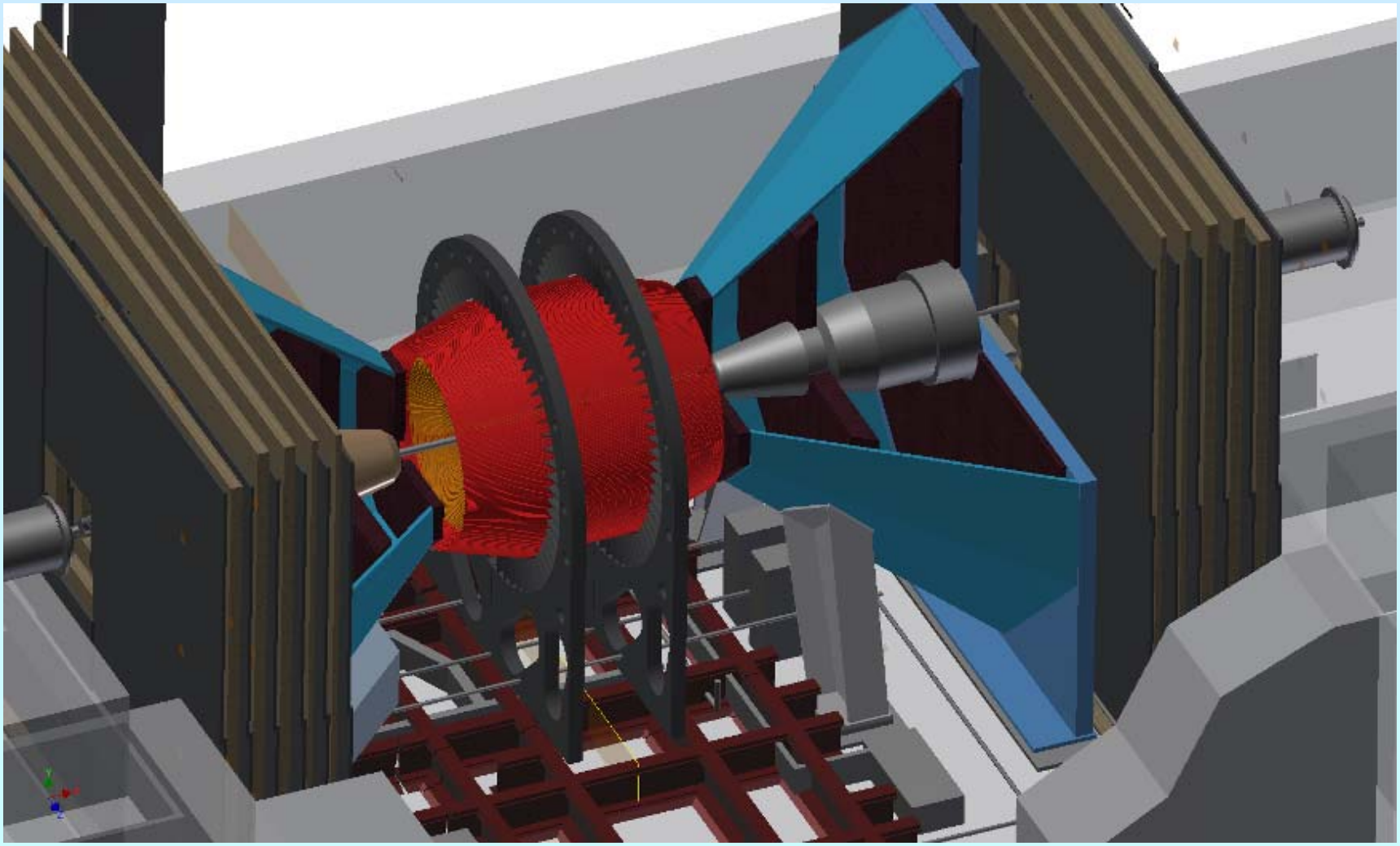

sPHENIX SC magnet, Hcal, EMCal and VTX3.0 in PHENIX IR with MMN, MMS, MuID in place, EC, WC and CM removed. No support structure or services considered yet

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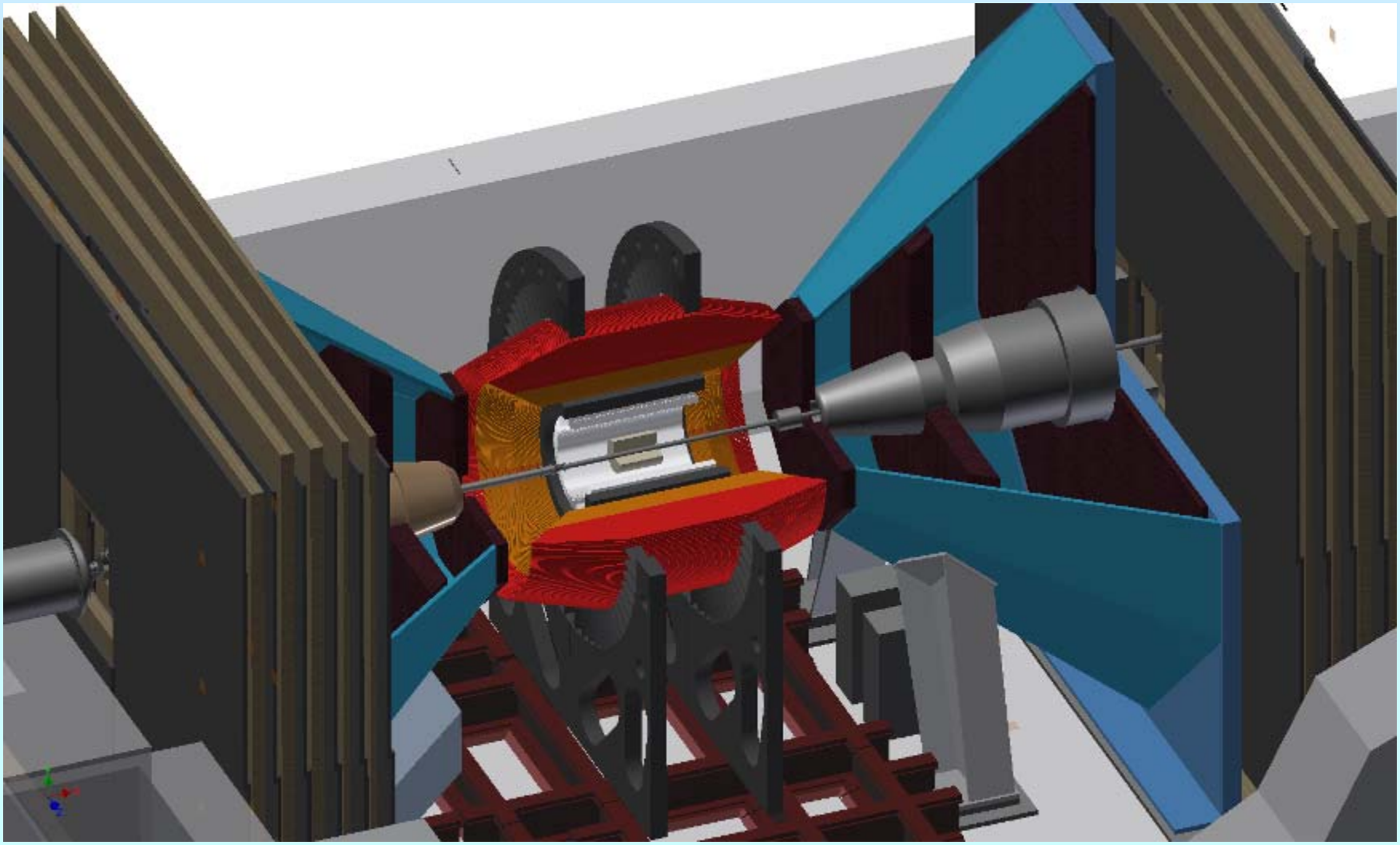

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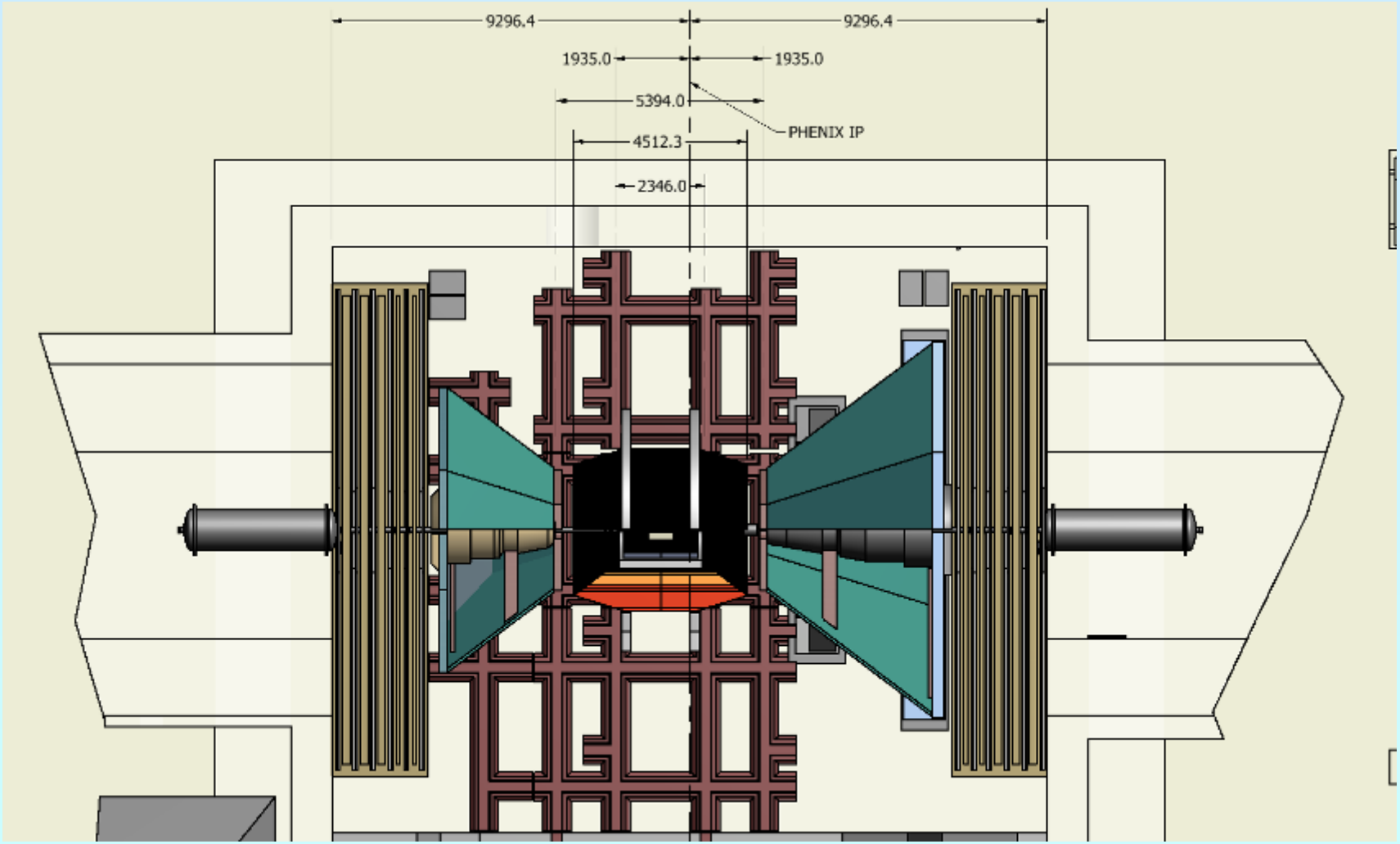

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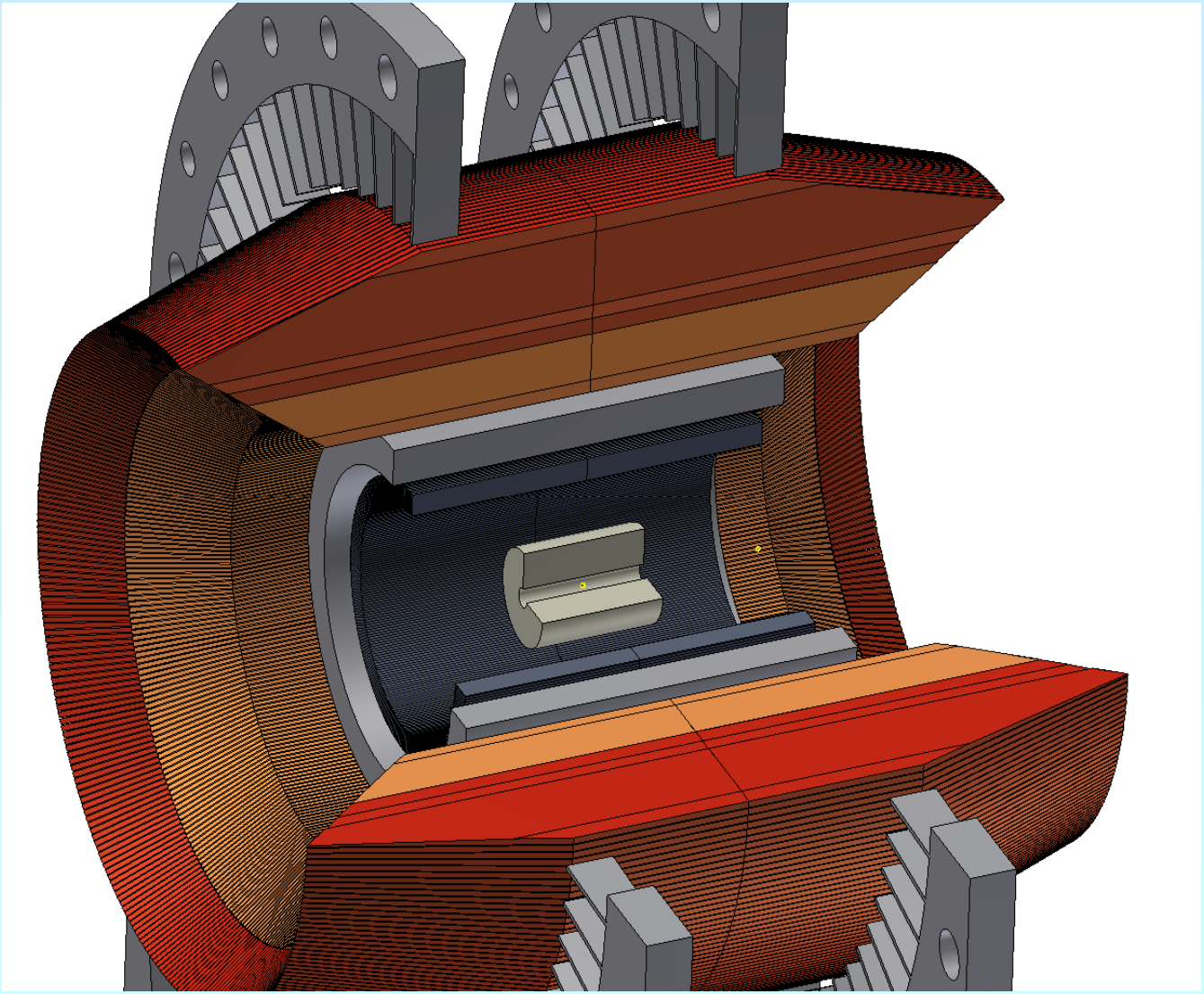

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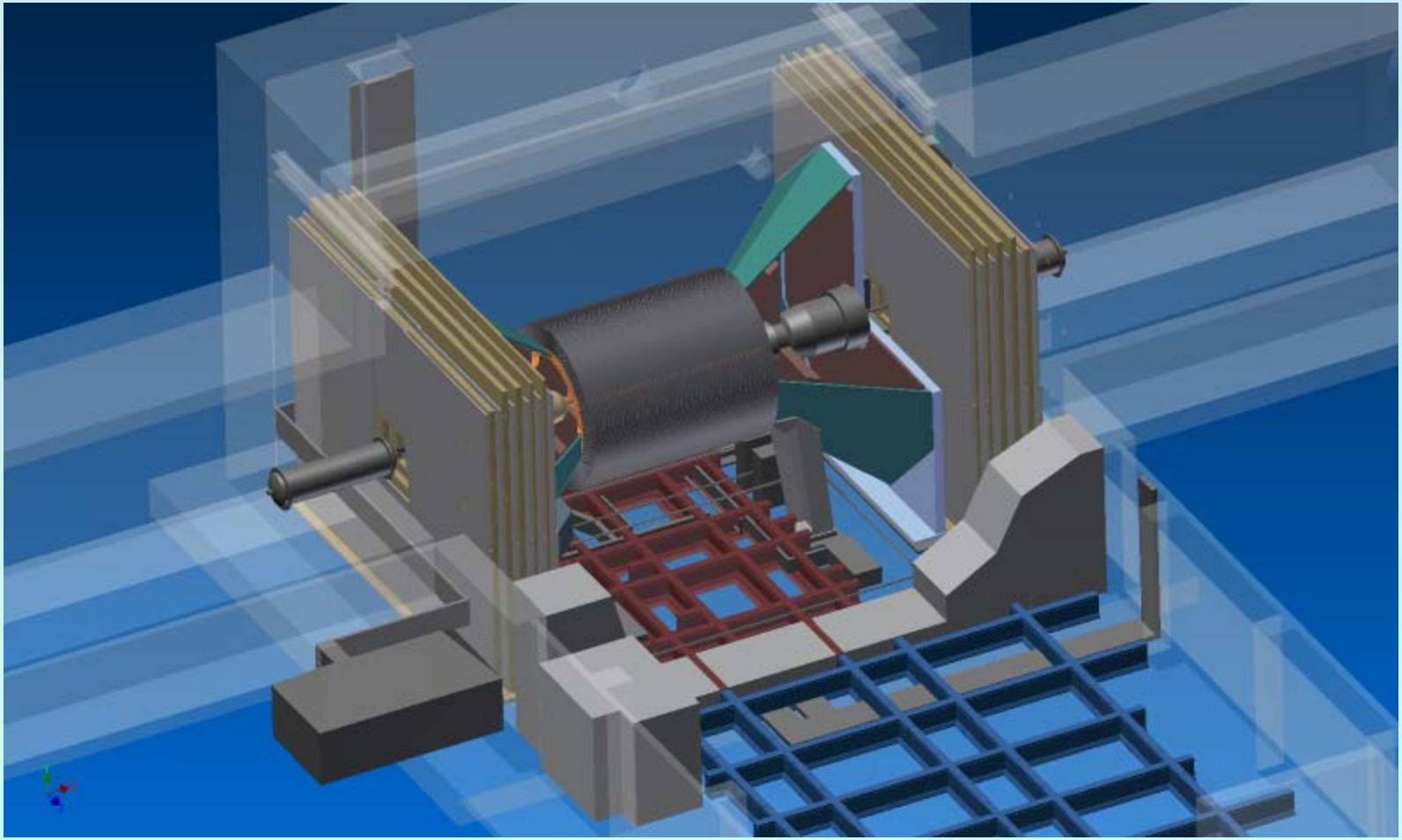

Safety, Security, Etc.

1. Configuration Management – we are reviewing our Config. Management policies and will develop a controlled procedure to assure that we are within Lab guidelines. Most important areas are Gas systems, Electrical and safety systems, experimental structures and equipment and Infrastructure.

2. Tier 1 Inspection: Today – no major problems

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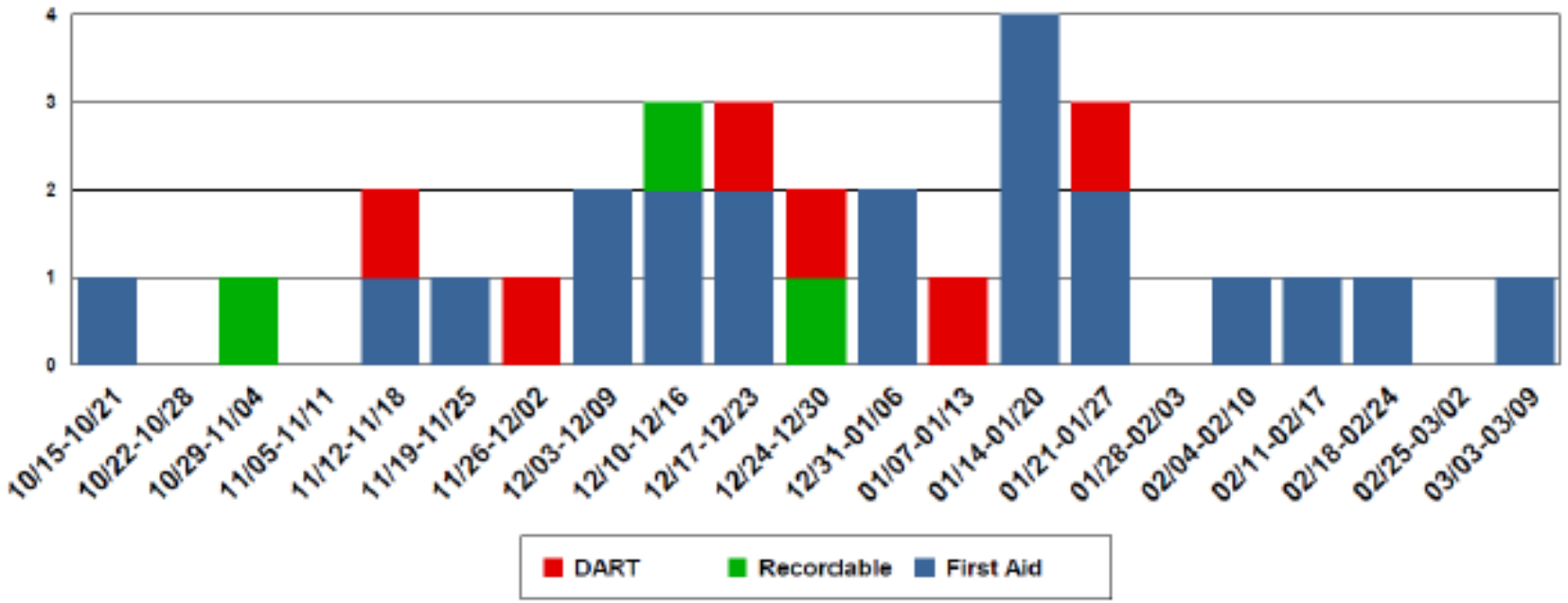
Tier 1 Inspection

Injuries Per Week
As of 3/9/2012



Injury Status:

FY12 YTD: DART – 8, TRC – 12, First Aid – 26
FY11: DART – 27, TRC – 42, First Aid – 45
FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx

Recent Injuries		
3/6/12	First Aid	An employee was injured when he struck his head against ductwork as he stood up. At the OMC, first aid was given.

Recent Events

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Recent Events		
3/8/12	Non-Reportable	Fire/Rescue responded to a release outside Bldg. 933A, when a hydraulic fluid line on a fork lift failed. Approximately one gallon was released. (Event Link)
3/6/12	Non-Reportable	While stopping a government vehicle at Building 801 outside the HP office the employee noticed the brakes had little resistance and a maintenance indicator turned on the dashboard. After the vehicle came to a stop he exited and looked underneath it. He noticed brake fluid dripping and immediately contacted his supervisor. His supervisor directed him to report to the ORPS categorizer and the supervisor reported the event to #2222. Fire/Rescue responded and the small leak (less than 1 gallon) was contained on the pavement. The vehicle was returned to the automotive shop by the mechanics. (Event Link)
3/5/12	SC-3	On March 5, 2012, Fire/Rescue responded to a fire alarm at Bldg. 510 at 3:45 PM. An odor of burning plastic was detected, and the building was evacuated. A lengthy investigation ensued; the source of the odor and smoke was not discovered until after 10 PM. A malfunctioning heater in a duct had burned the outer insulation. The heater was de-energized. There were no injuries. (Event Link)
3/2/12	SC-BNL	A water pump motor failure resulted in a smoke condition and triggered alarms. The Fire-Rescue group responded, isolated the motor, and vented the building to clear the smoke condition. Technicians were called to service/replace the pump motor. (Event Link)
3/2/12	SC-BNL	At noon on 3/2/2012, RadCon personnel at BGRR made an entry into the area known as the deep pit to remove debris and discovered there was also water in the sump. Samples of the water were taken and the water was pumped out and into containers. It was determined that the water was an accumulation of dust suppression water that had been sprayed during the course of the bioshield demolition. (Event Link)
2/23/12	SC-3	On 02/23/2012 at approximately 10:00 AM, the FPM was contacted by the Alarms Group Supervisor about a problem with the annual fire alarm testing being conducted in Bldg. 170. All the fire detection devices in the North wing, which comprises 15 rooms on the first floor of the building, did not have any electrical power. Upon investigation it was confirmed that all the breakers in electric panel 170-CP-1, which supports the fire detection in the 15 affected rooms, were found in the OFF position. Subsequently, the breakers were turned ON and the fire detection devices were all tested satisfactorily. (Event Link)

Where To Find PHENIX Engineering Info

Happy St. Paddy's Day this Saturday !!

Where to celebrate: Parades in every US State, Canada, Ireland, England, Scotland, Australia, New Zealand, Austria, Canary Islands, Croatia, Cyprus, Denmark, Germany, Greece, Hungary, Norway, Italy, Netherlands, Russia, Spain, Turkey, China, Japan, Korea, Singapore, Taiwan, Dubai, Parties everywhere else including France, Ghana, Brazil, Argentina, Uraguay, Sweden, Bulgaria, Iraq, Afghanistan

- First Parade: New York 1762 (NY is also largest)
- Longest continuous: Montreal Canada (1824-present)
- Shortest Parade: Bridge Street in Hot Springs Arkasas (98 feet)
- Longest Celebration: St. Patrick's week in Montserrat. (St. Patrick's Day is a national holiday).
  Smallest Parade: Enterprise Alabama: 1 person with a pot of gold and an Irish Flag marches past the courthouse and around the Bol Weevil monument. Since 1993.
- Coldest Celebration: Bering Sea Ice St. Patrick's Golf Classic, Nome, Alaska 6 hole course.
- St. Patrick's Day Parades are banned in Iran (still).

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm